

# GR30 - Research Gamma Irradiator

## Overview

The Model GR30 Research Gamma Irradiator is a self-contained irradiator designed specifically for research applications. It provides high doses in short times in exact and repeatable protocols, yet is simple to operate. The GR30 is a versatile irradiator well suited for a broad spectrum of research projects.

## Exposure Chamber

A shielded enclosure provides an exposure chamber for irradiating biological specimens to predefined exposure rates. The interior size of the chamber is 4 inches diameter x 8 inches tall. A motorized turntable rotates the test chamber at the rate of 5 RPM. Once the test chamber is loaded, the rotating shield is turned 180° to place the test chamber in the center of the irradiator next to the source.

The sources are doubly encapsulated, hermetically sealed, special form sources. The source capsule is fabricated of stainless steel. A stainless steel and tungsten rod houses the source(s) in the irradiator. Dose uniformity is +/- 20%.

## Shielding

The irradiator consists of 2 shields, one inside of the other. The overall shield is 13 inches by 19 inches by 19 inches tall, and weighs 2,000 lbs. A cylindrical rotating shield is located at the front of the shield and houses the test chamber. The rotating shield is turned 180° to place the test chamber next to the radioactive source which is located at the rear of the rotating shield. The source is permanently encased in the approximate center of the shield. Lead provides sufficient shielding to limit radiation levels to less than 0.5 mR/h at 12 inches from the surface of the shield. All lead is totally encased in steel.

## Control System

The control panel has a timer, an expose and return switch, and a keyed power switch. The operator interface is an LCD display and keypad with function keys. Time is entered via keypad and can range from 1 second to 250 hours. Preset and elapsed time are displayed. The turntable can be turned on or off.

When the expose button is pressed, and all interlock circuits are satisfied, the shield motor turns on and moves the test

chamber to the exposed position. A position sensor confirms chamber position. When the timer expires or the return button is pressed, the test chamber returns to the load/unload position.

## Specifications

**Physical Size:** 24 inches x 24 inches x 48 inches

**Test Chamber Size:** 4 inch diameter x 8 inches tall

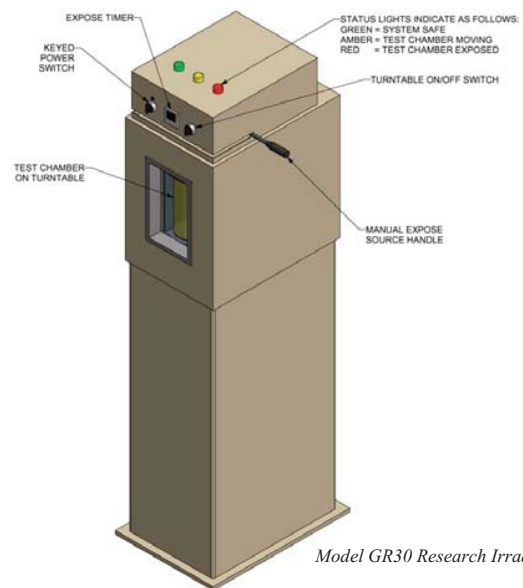
**Weight:** 2,500 lbs **Floor Loading:** 625 lbs/sq. ft.

**Available Cs-137 source sizes:** 200, 400, 900, 2400 Ci

**Power Requirements:** 120-240 VAC 50-60 Hz, 5 Amp.

## Accessories and Options

- Preprogrammed settings.
- Turntables of different diameters can be provided to improve dose uniformity.
- Jigs and fixtures are available for a variety of sample holders such as cell cultures and flasks.
- Cages for small animals are also available.



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Radioactive Sources	
Source (Cs-137)	Dose Rate R/hr
2400 Ci	90000
900 Ci	36000
400 Ci	24000
200 Ci	7800